# HANDBOOK OF PHONOLOGICAL DATA
# FROM A SAMPLE OF THE WORLD'S LANGUAGES

A Report of the Stanford Phonology Archive

Compiled and edited by

John H. Crothers
James P. Lorentz
Donald A. Sherman
Marilyn M. Vihman

685 Inuit

685 01 p[01 02]

685 02 p-long[01]

685 03 t[01 02 03]
[t/s][60]

685 04 t-long[01]
*[t-long/s]

685 05 k[01 02 04]

685 06 k-long[01]

685 07 q[01]
[x-uvular][61]
(free)

685 08 q-long[01 30]

685 09 t-long/s[31]
(tag(-),allo)
*/t-long/

685 10 beta[05]
[v]
(free)
[w][62]
(free,transitional)

685 11 f-long[06 33]
[phi-long]
(free)

685 12 s-laminal[07 34]
[s][63]

685 13 s-laminal-long[08 33]

685 Inuit

14 s-hacek[35]
(limited)

15 s-hacek-long[33 35]
(limited)

16 j-fricative
[yod][64]
(free,transitional)

17 gamma[09]

18 x-long[10 33]

19 gamma-uvular[11 36]

20 x-uvular-long[33]

21 m

22 m-long

23 n[13]

24 n-long[13]

25 eng

26 eng-long

27 n-uvular[38]
(limited)

28 n-uvular-long[37]
(surface)

29 l[13 14]

685 Inuit

30 l-fricative-long[15]

31 glottal stop[39]
(limited,transitional)

32 h[40]
(limited)

51 i
[e][16 65]
[schwa-uvularized][66]
[i-voiceless][67]
(free)

52 iota-long[17]
[schwa-long-uvularized][18 66]

53 a[19]
[alpha-unrounded-uvularized][66]

54 a-long[20]
[alpha-unrounded-long-uvularized][18 66]

55 u[21]
[o][65]
[o-open-uvularized][66]
[u-voiceless][67]
(free)

56 upsilon-long[17]
[o-open-long-uvularized][18 66]

685 $a Inuit $b West Greenlandic $d Eskimo-Aleut $e Greenland $f 65,000 (all Inuit dialects) $g John Crothers

685 $a Thalbitzer, William $b 1904 $c A Phonetical Study of the Eskimo Language $f (Meddelelser om Gronland 31) $g Copenhagen $q extensive fieldwork

685 $a Rischel, Joergen $b 1974 $c Topics in West Greenlandic Phonology $g Copenhagen: Akademisk Forlag $q informants; written sources; other grammars

685 $a Kleinschmidt, Samuel $b 1851 $c Grammatik der Groenlaendischen Sprache $g Berlin: G. Reimer

685 $a **BASE OF ARTICULATION** $A "The surface of the tongue is apt to lie near the roof of the mouth, is convex at the back, slightly protruded, and in front stretched out very far toward the teeth. The whole of the movable body of the tongue takes part in the vertical movements without any great curvature at any point. So when the point of the tongue is raised or lowered, all the front part of the tongue follows the movement." (p.118)

685 $a **CONSONANT CLUSTERS** $A Kleinschmidt's orthography recognizes a variety of medial consonant clusters. Many consonants occur in the second position of a cluster, while just three initial elements are recognized: labial, velar, and uvular consonants, apparently of somewhat indeterminate character (fricatives?). At the turn of the century Thalbitzer found only remnants of the clusters with initial labials and velars, which he did not necessarily recognize as deriving from earlier clusters. (p.145ff) The sound which Thalbitzer hesitantly speaks of as a "prevelarized" [l-voiceless] (p.146) seems to correspond to an etymological cluster with velar first element. Thalbitzer also noted that in clusters with an initial uvular fricative the second element might be long. (p.162ff) In the present language only the clusters with initial uvular remain, and the second element is always long. (Rischel, p.35ff) Rischel believes that the elimination of consonant clusters had proceeded quite far even in Kleinschmidt's time, and that Kleinschmidt frequently based orthographic clusters on

morphophonemic rather than phonetic considerations. (p.34ff)

685 $a **INTONATION** $A Rischel mentions several types of intonation patterns found at the end of words or phrases (p.185ff): (1) In phrase internal position words end with a relatively high pitch. (2) In phrase final position there is generally a dip in tone, on the penultimate (or ultimate) mora. The characteristic phrase final intonation of a word is high-low-high. (p.79ff) (3) Yes/no questions have a high-falling terminal contour. (4) A low level terminal contour occurs as "a signal of finality."

685 $a **STRESS** $A Stress plays no distinctive role in Greenlandic, and there seems to be no agreement as to whether there are any consistent phonetic stress patterns. See Rischel (p.90ff) for a review of opinions.

685 $a **SYLLABLE** $A (C)V(V)(C) $A There are severe limitations on the clustering of vowels and consonants. (See note on consonant clusters.) In Southern West Greenlandic a further limitation on the syllabic structure is imposed by the shortening of consonants after long vowels.

685 $z Morphophonemics $Z Greenlandic is a highly synthetic language, with numerous inflectional and derivational suffixes. Noun inflection includes marking for number and case of the head noun as well as person and number of possessor. Verb inflection includes, among other things, marking for mood and person and number of subject and object. Few of the rules stated in Rischel have any bearing on the internal structure of the inflectional endings. The rules which have been archived cover alternations in stems and derivational suffixes. Rischel makes a broad distinction between "replacive" and "additive" suffixation. The former involves fairly radical modification of stems before certain suffixes: the last vowel and consonant of the stem are lost or moved, and there is some kind of change (usually involving gemination) in a stem internal consonant. (See rules 6405370 through 6405390.) These processes can be regarded as morphological, rather than phonological, in the present language. There is great fluctuation in usage of stem forms with these internal modifications, and Rischel feels the long term tendency is toward paradigms without the modified stem forms (p.420ff.). The term "additive" suffixation covers a number of more and less regular processes of modification of segments at morpheme boundary. Stems may end in a vowel or a velar or uvular consonant of somewhat indeterminate quality. (Stem final dental consonants are a problem. See p.191ff. and p.392ff.) Suffixes generally begin with a consonant; some have alternation between vowel-initial and consonant-initial forms; a few can be said to begin with vowels. The most general rules for combination of a stem and suffix are (a) when a stem final vowel precedes a suffix initial consonant there is no modification; (b) when a stem-final consonant precedes a suffix initial consonant a geminate consonant is produced (rule 6405190). There are however several other possibilities. Some suffixes (an arbitrary set) require deletion of a preceding consonant (rule 6405310), "truncation"); others absorb a preceding stem-final consonant (rule 6405320), "fusion"). Stem-final consonants are deleted before vowel-initial suffixes (rule 6405330). The initial consonant of some suffixes alternates between stop and fricative forms (rule 6405350). Also some stem final consonants show alternation between stop and continuant forms (no rule; see Rischel p.399ff.). When vowel sequences are formed at morpheme boundary there may be assimilation (rule 6405220), insertion of a glide or fricative (rules 6405040, 6405231, 6405232) or shortening (rule 6405240). Some stems end in a variable vowel (rules 6405341, 6405342). Some stems ending in /i/ cause assibilation of a following /t/ (rule 6405360).

685 01 $A The stops have "little or no aspiration." (Rischel, p.131) Thalbitzer (p.71) notes aspiration before "i, e, u."

685 02 $A Rischel (p.131) says "/p/ makes the impression of being...lax, and /t, k/ more tense." Thalbitzer calls the first unaspirated, and the other two "weakly aspirated."

685 03 $A /t/ is "in the majority of cases articulated against the lower edge of the upper teeth (interdentally) or against their back surface." (Thalbitzer, p.90)

685 04 $A Position of /k/ varies considerably according to adjacent vowels. (Rischel, p.134) It is often slightly palatalized before /i/. (p.82)

685 05 $A [beta, v] are occasionally devoiced.

685 06 $A /f-long/ is produced with vigorous exertion of the lungs (Thalbitzer, p.71); "strong friction noise." (Rischel, p.134) According to Rischel [f-long] is the predominant articulation. (p.134) Thalbitzer finds the variants about equal. (p.103)

685 07 $A For /s-laminal/ the front of the tongue is protruded, the point is passive against the lower teeth, the middle of the tongue is raised. (Thalbitzer, p.89)

685 08 $A /s-laminal-long/ has "strong friction noise." (Rischel, p.134)

685 09 $A For /gamma/ the position varies considerably according to adjacent vowels. (Rischel, p.134) Like other voiced fricatives, it is "rather weakly articulated," "often quite vocoid-like." (Rischel, p.172) Thalbitzer and Rischel report considerable fluctuation between /gamma/ and /eng/. Also /gamma/ may be lost intervocalically (the only position it occurs in). Some

dialects lack it entirely. (Rischel, p.65ff)

685 10 $A /x-long/ varies from back-velar to post-palatal depending on surrounding vowels. (Thalbitzer, p.87; Rischel, p.134) It has vigorous exertion of lungs and diaphragm (Thalbitzer, p.71); "strong friction noise." (Rischel, p.134)

685 11 $A /gamma-uvular/ is most tense preconsonantally, least tense intervocalically. (Thalbitzer, p.76ff) Like other voiced fricatives it is "rather weakly articulated," "often quite vocoid-like." (Rischel, p.134)

685 12 $A /x-uvular-long/ has vigorous exertion of lungs and diaphragm (Thalbitzer, p.71); "strong friction noise." (Rischel, p.134)

685 13 $A "In the majority of cases /n/, /l/ are articulated against the lower edge of the upper teeth (interdentally) or against their back surface." (Thalbitzer, p.90)

685 14 $A /l/ is occasionally devoiced.

685 15 $A /l-fricative-long/ has vigorous exertion of lungs (Thalbitzer, p.71); "strong friction noise." (Rischel, p.134)

685 16 $A [e] often becomes nasalized word-finally or after /m/ or /n/. (Thalbitzer, p.153)

685 17 $A Rischel (p.89, 139) suggests there is some diphthongization for /iota-long, upsilon-long/. This is strongest after uvulars. (p.135)

685 18 $A Uvularized "long vowels...often sound as if the influence from the following consonant increases somewhat towards the end." (Rischel, p.137)

685 19 $A /a/ shows a tendency toward fronting and raising before velars and especially dentals; both Thalbitzer and Rischel remark on this, but the latter says it is not very consistent.

685 20 $A /a-long/ appears to be fronted and perhaps slightly diphthongized before dentals. (Rischel, p.137)

685 21 $A /u/ is strongly backed, except for a tendency to fronting between dentals and before /i/ and /yod/. (Thalbitzer) Rischel (p.136) notes the same fronting tendency.

685 30 $A There is no distinction between /q-long/ and a cluster of /gamma-uvular/ followed by a uvular stop.

685 31 $A There is no short affricate */t/s/ (except as an allophonic variant of /t/ before /i/). The long affricate appears to arise from two sources historically: (1) combination of /t/ and /s/, and (2) affrication of /t-long/ before /i/ in some dialects of West Greenlandic. (Rischel, p.57-73)

685 32 $A Thalbitzer (p.96ff) finds the bilabial articulation of /beta/ dominant.

685 33 $A The long voiceless fricatives are shortened after a long vowel in southern dialects.

685 34 $A According to Rischel "there is a good deal of variation in the phonetic quality of /s-laminal/ in other dialects" (other than central West Greenlandic, which preserves the distinction between /s-laminal/ and /s-hacek/). (p.174)

685 35 $A Thalbitzer does not mention /s-hacek/. It is however an established independent phoneme historically, and still exists distinct from /s-laminal/ in central West-Greenlandic. Phonetic data is vague. (Rischel, p.173ff)

685 36 $A The only consonant clusters of Greenlandic are medial clusters of /gamma-uvular/ followed by a long consonant. It would seem that the most consistent manifestation of the uvular in these cases is the uvularization of the preceding vowel. The actual consonantal friction between the uvularized vowel and the following geminate is not always present, according to Rischel. (p.40, 141)

685 37 $A Clusters of /gamma-uvular/ followed by a (long) nasal often become /n-uvular-long/. (Rischel, p.176ff) "It is dubious whether there are any lexical items which occur only with /n-uvular-long/." (Rischel, p.179)

685 38 $A /n-uvular/ occurs only as optional variant of word final /q/ followed by a vowel in some phrases. (Rischel, p.154)

685 39 $A /glottal stop/ is used in exclamations of pain or disgust. (Thalbitzer, p.72) It is inserted before word initial vowels phrase initially or after a word ending in a vowel.

685 40 $A /h/ is used in laughter, emphatic exclamation, imitation of auk's cry. (Thalbitzer, p.71)

685 [60] $A /t/ becomes [t/s] before /i/ in some WG dialects.

685 [61] $A /q/ often has "imperfect closure.... It approaches a fricative." (Rischel, p.131)

685 [62] $A A non-distinctive [w] may be introduced between /u/ and a following /i/ or /a/. (Rischel, p.107) This same [w] may also represent a reduced /beta/. [beta] and [w] do not contrast. (Rischel, p.114)

685 [63] $A /s-laminal/ becomes [s] after /gamma-uvular/. (p.89)

685 [64] $A A non-distinctive [yod] may be introduced between /i/ and a following /u/ or /a/. (Rischel, p.107) This [yod] may also represent a reduced /j-fricative/. [yod] and [j-fricative] do not contrast. (Rischel, p.114)

685 [65] $A /i, u/ are lowered to [e, o] before /eng/ and word boundary. (Thalbitzer) Rischel says in open syllables and before nasals. (p.18, 19) There is also lowering after uvulars. (Rischel, p.135) /i/ is transcribed by Thalbitzer as [iota] before [eng], while /u/ is transcribed as [o]; however Thalbitzer (p.154) suggests that the degree of lowering is the same in both cases. Rischel (p.18, 19) is skeptical about fine shades of vowel allophones, but agrees substantially with Thalbitzer on the conditions and types of modification. (Rischel (p.138ff) takes the slightly lowered phone as basic.)

685 [66] $A /i, u, a/ are retracted and uvularized before uvulars. Rischel (p.136) says "pharyngealized." For impressionistic phonetic description, see Thalbitzer, p.110ff. In spite of its allophonic status vowel uvularization is undoubtedly perceptually highly significant, and it is really distinctive when phrase final uvulars or the uvular fricatives in consonant clusters are lost. (Rischel, p.141, 143)

685 [67] $A High vowels devoice frequently between voiceless consonants. This is especially common with the sequence [t/s.i]. (Rischel, p.140)